

REMARKS

Applicant respectfully requests favorable reconsideration of this application in view of the foregoing amendments and following remarks.

Applicant notes with thanks that the Office has indicated that claims 3-9, 11-16, 19-25 and 27-32 are merely objected to and would be allowable if amended to independent form, as needed.

Matters of Form

In Section 1 of the Office Action, the Office asserted that Figure 1 should be designated by a legend such as – PRIOR ART --. Applicant has amended Figure 1 accordingly.

In addition, in reviewing this case, applicant has noted several other formal matters in the specification and drawings that invite correction and has amended the drawing and specification accordingly. The amendments are explained below.

The formal drawings in this case added reference numbers 300, 400, 500, 600, 700, 800, and 900 in order to comply with Office rules. Furthermore, the original and formal drawings included reference number 825, not mentioned in the specification. Applicant has amended the specification in order to add mention of these reference numerals.

In Figure 3, reference numeral 311 located after reference numeral 333 is being relabeled as reference numeral 335 in order to be consistent with the description on page 25 of the specification. In Figure 9B, reference numeral 924 is being relabeled as reference numeral 935 in order to be consistent with page 56 of the specification. Applicant submits herewith proposed drawing corrections reflecting these changes.

In the specification, the following additional informalities are being corrected: On page 27, line 12, step 343 should be step 331; on page 28, lines 7 and 10, Mol should be MOL; on page 50, line 8, the reference should be to steps 819 and 825, rather than 819 through 823; on page 58, a mention of step 952 in

the flowchart was lacking and has now been added; and, on page 59, line 3, step 951 should be step 952 to be consistent with the drawing.

Prior Art Rejections

In Sections 3 and 4 of the Office Action, the Office rejected claims 1 and 17 under 35 U.S.C. §103(b) as anticipated by Morrison (U.S. Patent No. 5,854,903). In Sections 5-7 of the Office Action, the Office rejected claims 2, 8, and 18 under 35 U.S.C. §103 as being unpatentable over Morrison in view of Ginzboorg (U.S. Patent No. 5,898,672). Finally, in Section 8 of the Office Action, the Office rejected claims 10 and 26 under 35 U.S.C. §103 over Morrison in view of Szentesi (U.S. Patent No. 5,844,886).

In particular, the Office asserted that Morrison teaches the three steps of independent claims 1 and 17 of (1) identifying a first set of virtual pipelines from which traffic exceeds a predetermined threshold; (2) for each virtual pipeline in each said set, determining the number of additional channels needed to cause said traffic through said pipeline to not exceed said predetermined threshold; and (3) for each pipeline in said first set, assigning a corrective action and an amount of corrective action taken in said peripheral networks as a function of said number of additional channels. The Office referred to Figure 2 and column 9, lines 36-60 and column 26, lines 30-41 of Morrison as teaching these steps.

With respect to claims 2 and 18, the Office acknowledged that Morrison does not disclose that step 3 comprises assigning a call gapping rate for each such peripheral network contributing traffic to a pipeline for which traffic exceeds said predetermined threshold. However, the Office asserted that Ginzboorg discloses that step and that it would have been obvious to use call gapping, as taught by Ginzboorg, in Morrison's system "with the motivation being to provide the advantage of the central node is that the amount of the work due to comparison is reduced by $1/(1-p)$ (column 11, lines 7-9)".

With respect to claims 10 and 26, the Office asserted that Szentesi discloses the rerouting of calls in the peripheral network (columns 7, lines 14-24) and that it would have been obvious to use the rerouting of calls as taught by

Szentesi in Morrison with the motivation being to provide additional revenue gains over that obtainable by fluctuating rerouting traffic away from congested network links.

A. The Present Invention

The present invention pertains to methods and apparatus for determining network congestion and relieving that congestion by rerouting calls in the peripheral networks and/or implementing call gapping in the peripheral networks (i.e., the networks that are inter-connected by the central network). In the particular embodiment described in the specification in connection with Figure 4, for example, a list is made of all of the congested virtual trunk groups (VTGs) of the central network, and for each congested VTG, a number of DSO channels, D, is determined, wherein D is the difference between the number of channels presently in the VTG and the number of channels that the VTG would need to have in order to bring the traffic in that VTG below a predetermined congestion threshold (steps 401-419 in Figure 4). Then, a second list of VTGs is created comprising each VTG for which there exists a path between the source and destination nodes of the congested VTG (steps 421-429). Then it is determined if there are any alternative sources of gateways between the source and destination nodes that can accommodate the overflow from the particular congested VTG (steps 433-435). If so, the necessary information, such as the identity of the alternate source of gateway node, the identity of the VTG, the peak cell rate (pcr) of the new path, and the fraction of calls from the VTG that should be rerouted in the peripheral networks is forwarded to the peripheral network for implementation (step 437).

B. Traversal of Prior Art Rejection

Applicant respectfully traverses the rejection. Particularly, while Morrison teaches a technique for network congestion control involving the determination of network congestion via various parameters and taking corrective actions in

response to detecting congestion, it does not teach “determining a number of additional channels needed to cause said traffic through said pipeline to not exceed said predetermined threshold” (claim 1, step 2) or assigning a corrective action and an amount of said corrective action “as a function of said number of additional channels” (step 3). Morrison does not calculate the number of extra channels, D, needed to accommodate the traffic in the VTG. Instead, Morrison teaches the use of call blocking ratios. In particular, the Office has asserted that step 2 of claim 1 is taught in column 9, lines 36-44 and 54-60 and column 26, lines 30-41 of Morrison. However, this is not true. Rather, in column 9, lines 54-60, it actually states that, if there is congestion, “a new set of virtual path routings and capacity allocations are generated based on the blocking probabilities and network sensitivities determined in step 20”, not based on the number of channels, D as set forth in the present application.

Thus, Morrison completely skips step 2 of the present invention as claimed in claim 1. Note that Morrison’s determination of call blocking probability would correspond roughly to step 1 of claim 1 (determining if a VTG is congested).

Hence, claim 1 clearly distinguishes over the prior art of record.

Independent claim 17 substantively corresponds to claim 1 and thus distinguishes over Morrison for exactly the same reason.

Hence, Applicant respectfully requests the Office to withdraw the rejection of claims 1 and 17 as anticipated by Morrison.

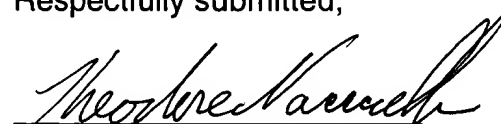
The remaining rejected claims, i.e., claims 2, 18 and 26 are dependent claims that depend from either claim 1 or claim 17. The secondary references do not disclose the missing teachings discussed above in connection with Morrison. Instead, those references have been cited for their alleged teachings of other limitations. Thus, presently rejected claims 2, 10, 18 and 26 distinguish over the proposed limitations exactly for the reasons given above in connection with claims 1 and 17 from which they depend.

As previously noted, the Office has already indicated that all other claims patentably distinguish over the prior art of record.

Conclusion

In view of the foregoing amendments and remarks, this application is now in condition for allowance. Applicant respectfully requests the Examiner to issue a Notice of Allowance at the earliest possible date. The Examiner is invited to contact Applicant's undersigned counsel by telephone call in order to further the prosecution of this case in any way.

Respectfully submitted,



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Annotated

FIG. 1 (PRIOR ART)

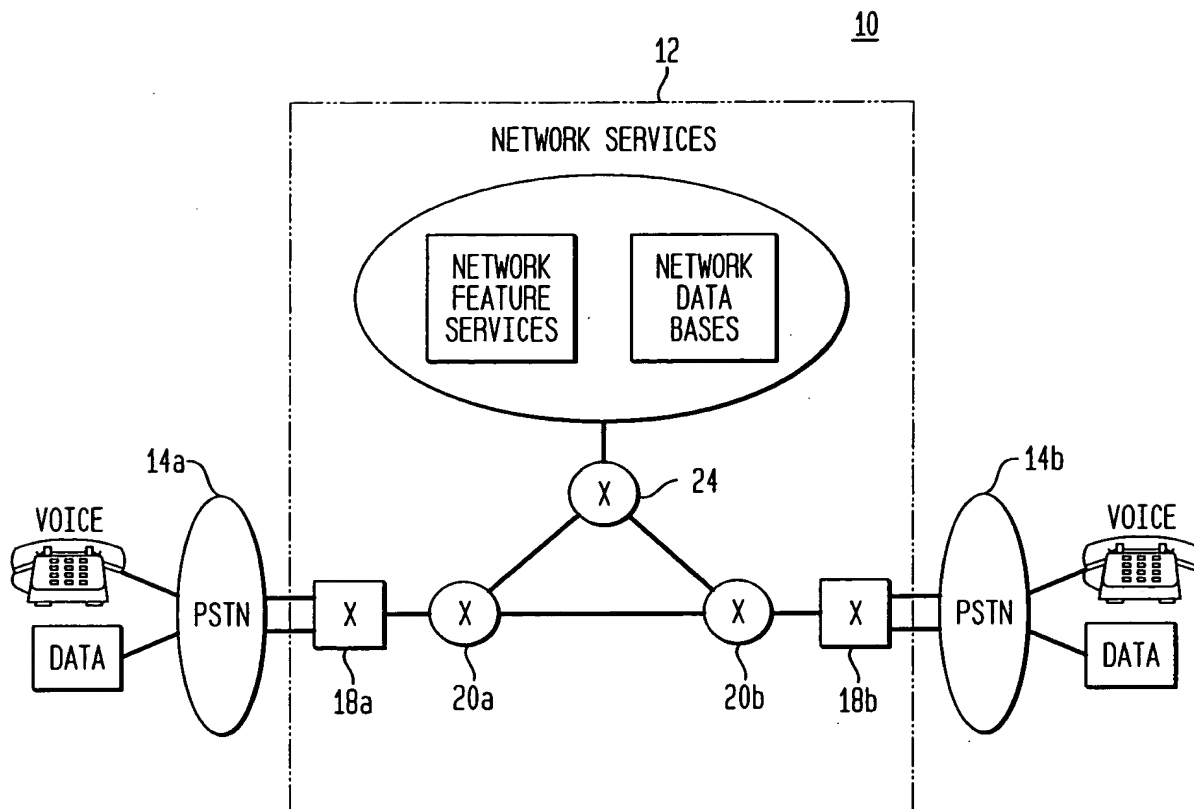
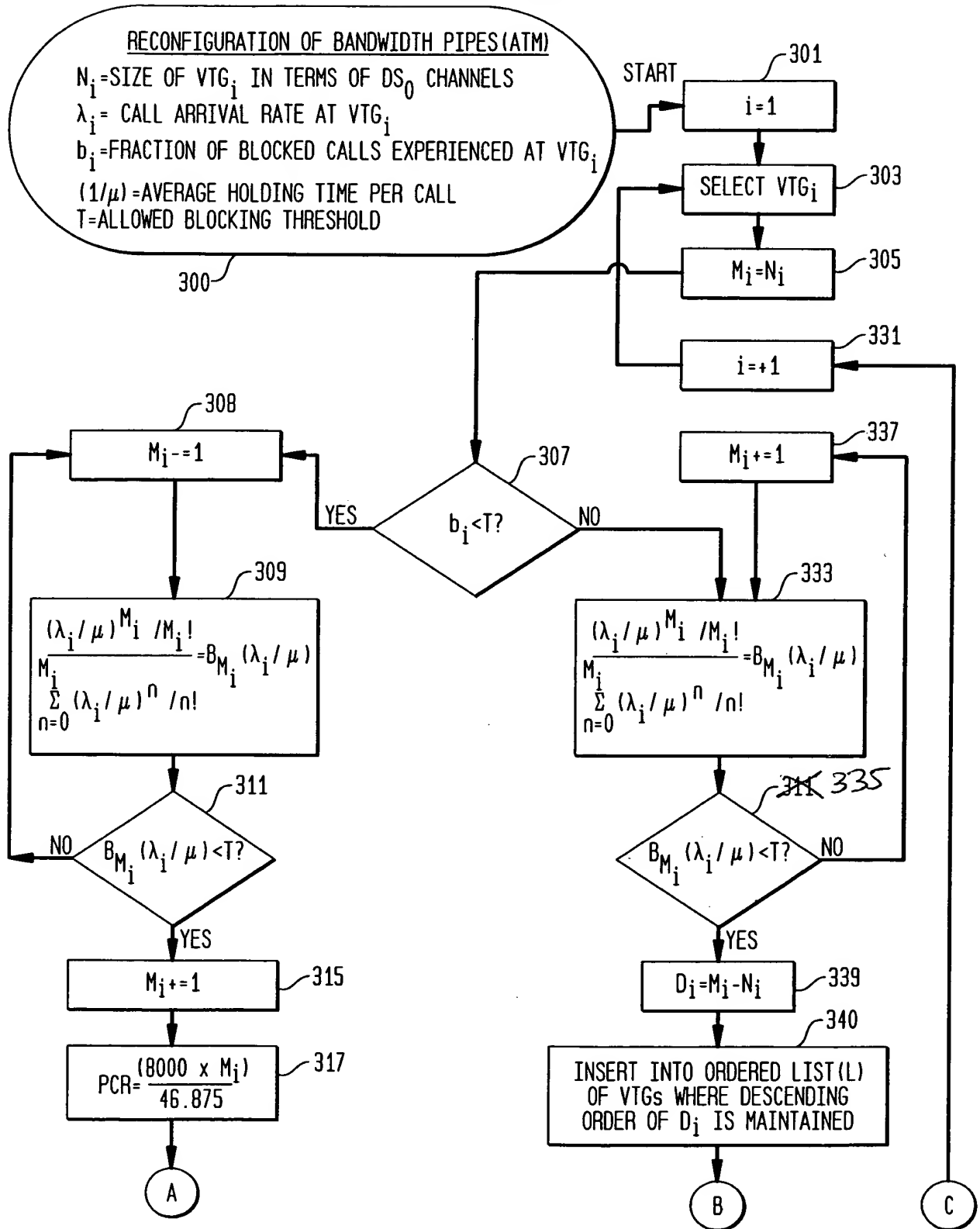
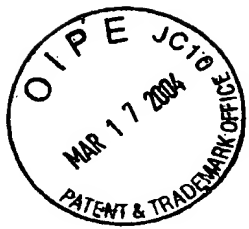




FIG. 3A Annotated





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FIG. 9B Annotated

